STYLE "HC-9"

ILLUMINATED SIGN

(For various applications requiring an invisible legend unless illuminated from within.)

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U. D. 231

Union Switch & Signal Co.
Swissvale, Pa.

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Subject STYLE HC-9 ILLUMINATED SIGN	UNION DEVELOPMENT
	Number #231
Catalog Plate K-162	Date January 21, 1938
	7 Sheets

The Style HC-9 Illuminated Sign has been developed to meet certain railway and road-side requirements where definite information should be displayed under one condition, while under other conditions, no indication whatever should be displayed. The need for such a sign arises where a highway is adjacent to and parallel with a railway at a highway crossing, and conditions are such that it is difficult or impracticable to locate ordinary highway crossing signals to protect all approaches. An illustration of this application is shown in Figure 2, where it will be noted that, with a train approaching the crossing,

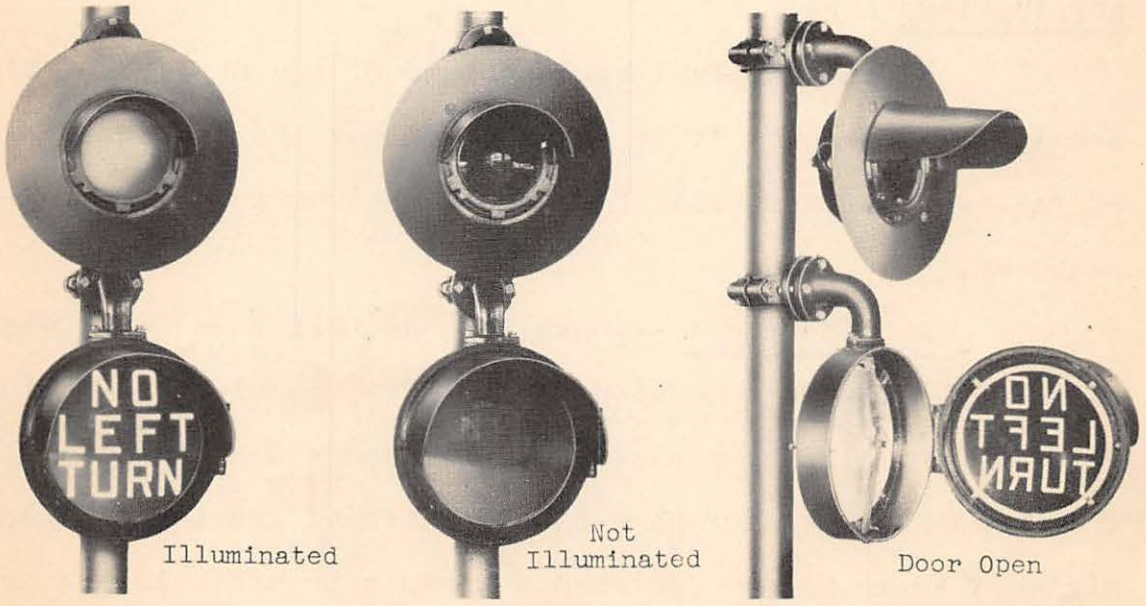


Fig.1 Style HC-9 Sign with HC-81 Flashing Light Unit.

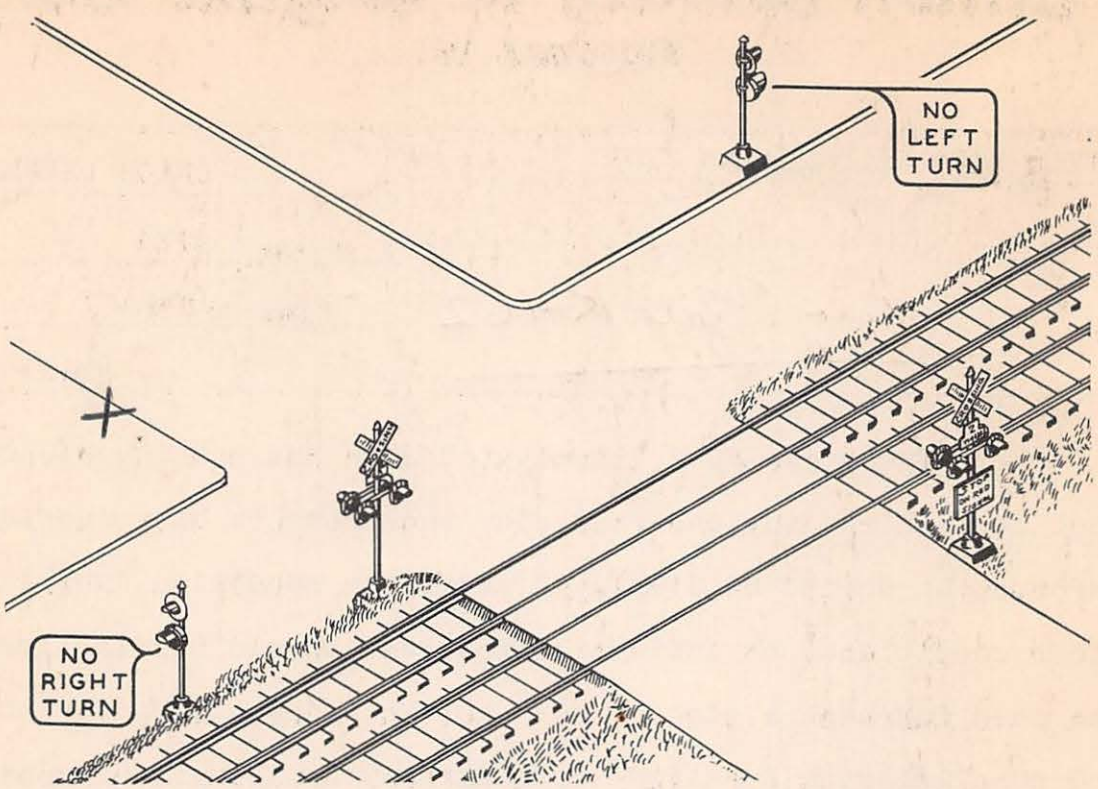


Fig.2 Typical Installation of Style HC-9 Signs at Highway Crossing

no turns across the railway track should be made from the parallel highway, while an absence of any indication is less confusing when there is no train approaching the crossing.

APPLICATIONS - Fig. 3.

A few practical applications of the Style HC-9 Sign are itemized below. It is considered that the initiative minds of railroad officers will foresee the answer to other special problems.

Application A - shows the "No Left Turn" sign with a flashing yellow unit mounted above. This combination would be used where a highway parallels a railroad and an additional street or highway crosses both the railroad and the parallel highway, as in Figure 2. When a train approaches such a crossing, the yellow light would flash and the "No Left Turn" and "No Right Turn" signs would be illuminated, indicating to traffic

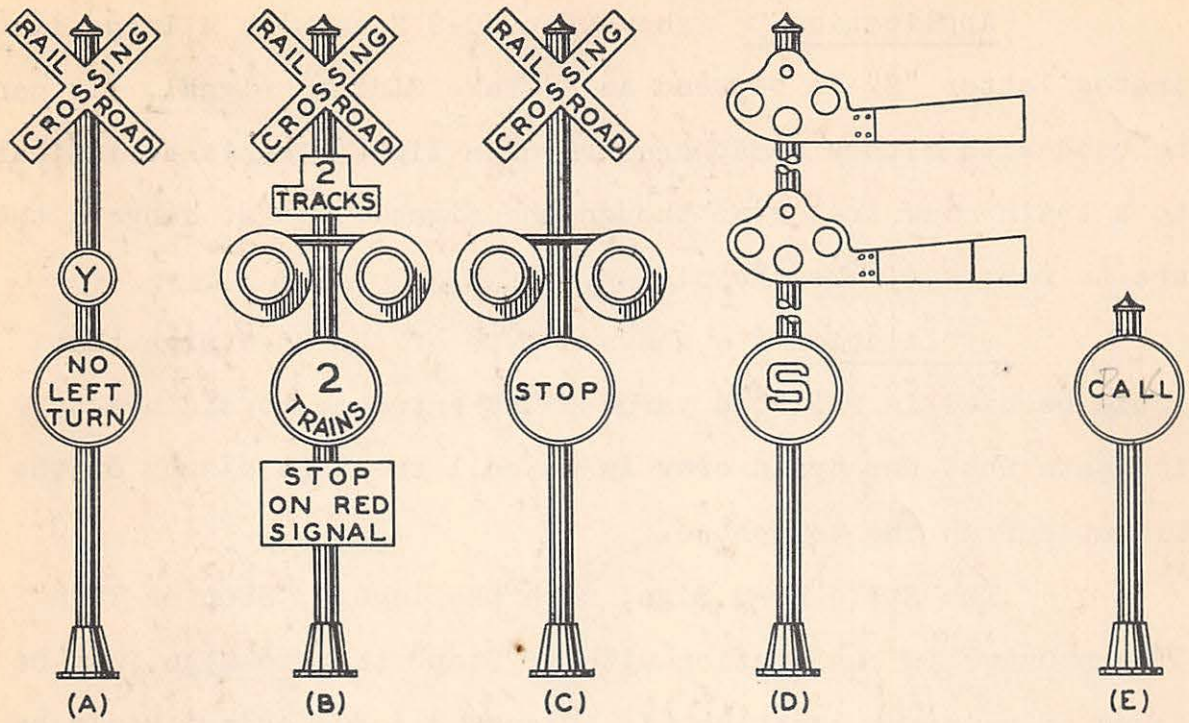


Fig.3 Typical Application Assemblies

on the parallel highway that turns should not be made to cross the railroad tracks. In addition to these signs, regular flashing light highway crossing signals would be located on the highway, crossing the railroad.

Application B - shows the HC-9 Sign on a regular highway crossing signal, used at a multiple track crossing. The HC-9 Sign, when used with the legend "Two Trains," would only be illuminated when two trains were approaching the crossing at the same time. The purpose of this sign would be to prevent motorists from crossing after one train had passed, directly into the path of the second train.

Application C - shows the HC-9 Sign with the legend "STOP". This could be used in place of our HC-42 "S T O P" sign and would require only one lamp bulb, while 4 are required in the HC-42 sign.

Application D - shows the HC-9 Sign with a large illuminated letter "S" to be used as a "Take Siding" signal. It can be used with either semaphore or color light signals to indicate to a train crew that even though the signals are at danger, they are to pass and take the siding.

Application E - shows a type of the HC-9 Sign that could be used in railroad yards or at entrance to sidings to indicate that the train crew is to call the Yard Master or the Dispatcher on the telephone.

The Style HC-9 Sign, with the legend "Stop or Turn" or "Turns Only" in conjunction with a "Stop" traffic sign, may be found of value at location "X", Figure 2. Its object would be to prevent traffic, intending to make a straight move across the railway, from advancing to the highway crossing signal and blocking all traffic on the road parallel with the tracks.

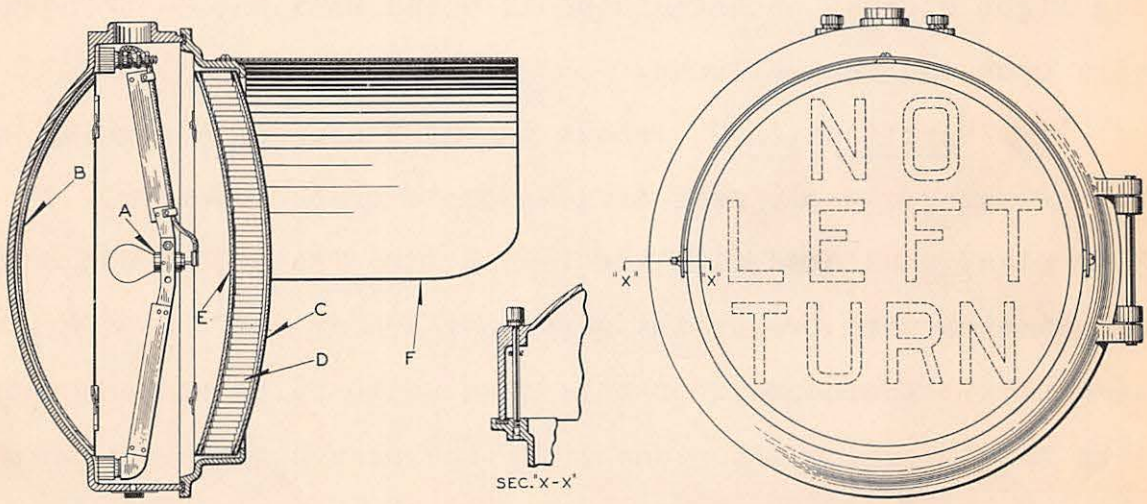


Fig.4 Detail Assembly view of Style HC-9 Sign Unit

DESIGN

The case and door of the HC-9 Sign, Figure 4, are made of cast aluminum. The case houses a 14" diameter shallow glass parabolic reflector. The lamp socket "A" is mounted adjustably

on a bridge support and is adjusted in our factory so that the filament of a 10-volt 25-watt precision type S-11 bulb is at the focal point of the reflector "B." A convex cover glass "C," with the inner surface sand-blasted, is mounted in the cast aluminum door. Directly back of this, and also mounted in the door, is a large cellular phankill screen "D." In back of this is another convex glass roundel "E," bearing the legend. The inner surface of this roundel or stencil is painted black, with the exception of the legend which remains clear. The special paint which is used for this stencil is fired into the glass to give a permanent and durable finish. Being on the inner surface next to the phankill, it is not subject to any abrasion or other damage.

Sand-blasting the outer convex cover glass serves two purposes. It provides some spread to the indication, and also helps to obscure the legend when the sign is not illuminated. The phankill screen, (described in U.D. #227) prevents light from shining into the signal, and being reflected back by the mirror, which would make the legend visible even though the bulb was not illuminated. The combination of the phantom screen and sand-blasted cover glass are very effective in obscuring the legend when the lamp is not burning.

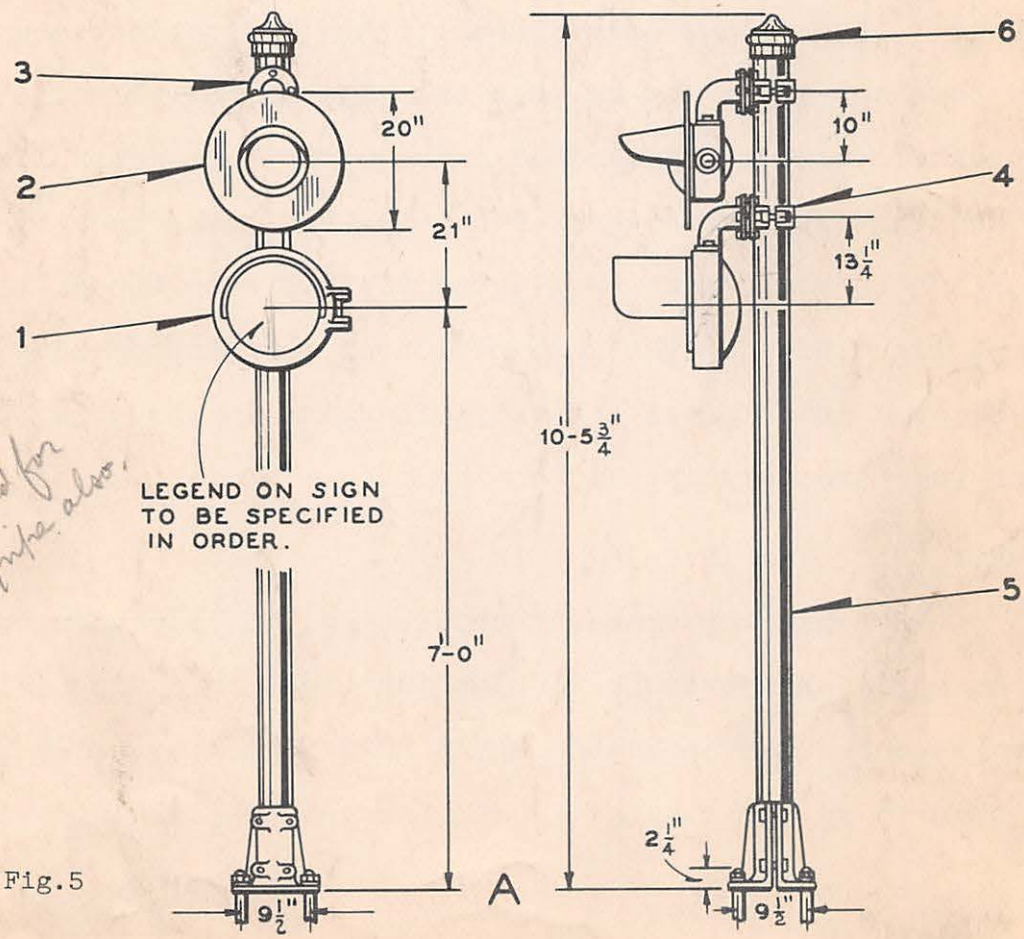
ASSEMBLY

For highway crossing protection, it is recommended that an auxiliary Style HC-81 Flashing Light unit with yellow cover glass be used above the Style HC-9 Sign, to arrest attention when it is illuminated. Both the yellow flashing unit and

the illuminated sign are mounted on brackets having adjustable ball and socket joints for alignment.

CHARACTERISTICS

For the application "No Left Turn" or "No Right Turn" it was considered sufficient to have the indication legible for at least two hundred feet, and to have an angular spread of 45°. It was found that a 14" diameter glass would accomodate the proper lettering for this range, and that, with our design, one 10-Volt 25-Watt lamp would supply sufficient illumination for a warning at better than three hundred feet, and legibility at two hundred feet in bright sunlight. This lamp permits the use of a stand-by battery, either primary or storage, a rather universal requisite in all highway crossing protection.



Can be furnished for 5" and 6" finish also.

Fig.5

ORDERING REFERENCES

Until such time as the Style HC-9 Sign is properly cataloged, orders may be placed by making reference to this U.D. and the following list of material, as shown in Figure 5.

PC.NO.	REF.	DESCRIPTION	DWG.
210297	A	Style HC-9 Sign and HC-81 Yellow Light Unit, complete with pole, pinnacle, brackets, foundation bolts and base, Fig.5; over-all height 10' 5¾". Order should mention sign legend.....	B8912-133
207949	1	Style HC-9 Sign Unit with legend "No Left Turn".....	C16646-1
207950	1a	Style HC-9 Sign Unit with legend "No Right Turn".....	C16646-1
	1b	Style HC-9 Sign. Mention legend required.....	C16646
193766	2	Style HC-81 Yellow Flashing Light Unit, (same as Ref.A, Pl.K-159, except with Yellow Cover Glass).....	C9481-3
149823	3	Adjustable Bracket for 4" Pipe.....	C8964-47
118146	4	Clamp Cap for 3.....	B8812-37
	4a	Bolts, 5/8" x 4¼" Sq.Hd.Mach.with 5/8" Hex Nuts and 5/8" Plain S.Lock Washers - All Cad. Plated.	
210296	5	Post, 4" Pipe, complete with base.....	B9893-383
145739	6	Pinnacle for Ref. 5.....	B8121-10
175067	7	10-V. 25-W. S-11 Lamp Bulb, 1¼" L.C.L., 1/64" precision, S.C. bayonet base.....	B12409-18

For other information see Plate K-195.

W. H. Crawford

Vice Pres. & Gen'l Mgr.